

REMARKS

Applicants respectfully request reconsideration of the present application.

I. Disposition of the claims

Claims 1-15 were previously canceled.

Claims 16-35 and 38-40 are pending and stand rejected.

Claims 36-37 and 41-52 were withdrawn. They are left in the application to remind the undersigned of the subject matter that may or may not be pursued in a continuing application.

Claims 24 and 34 were amended to further limit these claims as stated under 35 U.S.C. § 112, para. 4. No new matter has been added.

Claims 16, 18, 26, and 28 were amended to recite “into” rather than “in” as shown above.

Further discussion of the other amendments is made in the appropriate section of this amendment.

Claims 16, 18, 20-24, 26, 28, 30-34, and 40 are currently amended. It is submitted that these amendments are allowable under BdR 33(a), which refers to Rule 116(b)(1) (“complying with any requirement of form expressly set forth in a previous Office action”) or under Rule 116(b)(2) (“an amendment presenting rejected claims in better form for consideration on appeal”). This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate status identifier.

II. Rejections under 35 U.S.C. § 112, para. 2

Claims 16-25, 27-28, and 30-34 were rejected for two basic reasons. Office action, para. 4. Each is addressed under a separate header.

A. ***“additional element”***

Claims 16-25 as well as 26¹ and 28 were rejected for reciting “additional element.” Office action, para. 4. The term *at least one dopant element* has been added to claims 16, 18, 24, 26, and 28 as shown above. As to these claims, the amendment is allowable under Rule 116(b)(1). The rejection should be withdrawn.

Along these lines, the Examiner is asked to examine the amendment to claim 34, which parallels those of claims 16, 18, 24, 26, and 28, because they consistently use the term *at least one dopant element*. As to claim 34, the amendment is allowable under Rule 116(b)(2), and entry of the amendment is respectfully requested.

B. ***“Creating a nanoscale powder”***

Claims 20-23 were rejected for reciting no clear antecedent for “creating a nanoscale powder.” Office action, para. 4. The amendment ~~*the act of creating a nanoscale powder*~~ *composition of matter with one or more modified properties* has been made to claims 20-23 as shown above. As to these claims, the amendment is allowable under Rule 116(b)(1). The rejection should be withdrawn.

Analogous, but not identical, amendments were made to claims 30-33 and 40 as shown above. As to these claims, the amendments are allowable under Rule 116(b)(2), and entry of the amendments is respectfully requested.

III. **Rejections under 35 U.S.C. § 112, para. 1**

There are two different rejections, namely, written description and enablement. Each is addressed under a separate header.

¹ The rejection identified claim 27, but the context made the undersigned read claim “27” as if it were claim “26.”

A. *Written description*

Claims 16-37 and 38-40 were rejected for lacking a written description. Office action, para. 5. Based on a review of the file history, it is believed that the Examiner made the amended-claim type written description rejection. The Examiner's reasoning is as follows:

The claims are now amended to include a process step of combining a dopant into the lattice of a metal compound. The specification as originally filed does not provide teaching as to how such combining step can be done. None of the commonly-owned patents cited by Applicant provide support for this step either for the reasons set forth in section 6 below.

Office action, para. 5. The Examiner's attention is directed to paragraph 89- et seq. of the present specification. Paragraph 89 refers to the U.S. Pat. No. 5,984,997, and paragraph 98, last sentence, refers to U.S. Pat. No. 5,851,507. If the formula in paragraph 89 is does not convince the examiner that the invention, as recited, was in the minds of the inventors, then perhaps an interview is appropriate so that both sides could better understand the other's position.

Furthermore, the '507 patent exemplifies NiAl (example 3) and NiB (example 8), and states that "the process was proven viable for metals, alloys, intermetallics, ceramics, composites, and combinations thereof." The '507 patent, col. 13, ll. 59-61. In view of this disclosure, is there any reason why one of ordinary skill in the art could not use NiAl and NiB (smaller amount) in the same batch? The Examiner is asked to mentally convert each into a plasma, mentally mix them up, and mentally predict the result of nucleation. The Examiner certainly would not expect that only the same materials that went in will come out.

The corresponding disclosure of the '997 patent is continuously traceable to at least to May 22, 1998, i.e., through application no. 09/083,893, and the corresponding disclosure of the '507 patent is continuously traceable to September 3, 1996, i.e., the filing date of the '507 patent. Table 1 in the appendix shows the entire family of non-provisional applications and the copendency for the prior filed applications. Table 2 below shows a truncated version of Table 1.

Tables 1-2 show the applications in the family and calls them Applications A through K. The left column is the year. The numbers in Table 2's matrix refer to the month and day, e.g., at cell 2,7, the number "09-03" refers to September 3, 1996. Other dates are determined in the same way. For each column, the first number from top to bottom for a given application refers to the filing date, while the second number refers to the issue date, if any. The bottom row denotes the "prior" applications that were pending when the application was filed. Since Applications J and K were filed the same day, neither is prior to the other. They were, however, copending until the first one issued.

Table 2. Limited Pendency data for the present '577 application family.

Yr	577	Apn C 09/790,036 6,933,331	Apn F 09/083,893 6,228,904	Apn H 08/739,257 5,905,000	Apn I 08/730,661 5,952,040	Apn J 08/706,819 5,851,507	Apn K 08/707,341 5,788,738
96				10-30	10-11	09-03	09-03
97							
98			05-22			12-22	08-04
99				05-18	09-14		
00							
01		02-20	05-08				
02							
03	10-31						
04							
05		08-23					
06							
*	C	F	H,I,J,K	I,J,K	J,K	--	--

* Copending prior applications.

The disclosures of both the '997 patent and the '507 patent (Apn I) were incorporated by reference in the as-filed specification of Application C at page 5, lines 23-24, and in the as-filed specification of Application F at p. 5, ll. 16-24. Since Application F was copending with Application J, there is continuity of disclosure of Application F for all applications to the present application. Since Application F incorporated the '997 application material, there is continuity of disclosure from Application F's filing date to the present application. Thus, there should be no issue as to written description and the rejections should be withdrawn.

B. *Enablement*

Claims 16-35 and 38-40 were rejected as lacking an enabling written description. Office action, para. 6. Applicants' previous response emphasized that the '738 patent and the '997

patent provided support. In response, the Examiner disagreed. Office action, paras. 3.1-3.2.

Regarding the '997 patent, the reasoning presented is as follows:

the '997 patent discloses method of making nanoscale powder from a powder, and such method involves neither dopant nor requires formation of at least three elements in the resulting powder. Therefore, the '997 patent does not provide support for the production method of nanoscale powder as claimed.

Office action, para. 3.2. The Examiner is asked to consider the '997 patent, example 3 (tungsten doped tin oxide), example 5 (copper doped zinc tin oxide), and example 6 (copper doped nickel zinc ferrite). Furthermore, the Examiner is directed to column 3, lines 52-et seq. In view of these disclosures, it is respectfully submitted that the rejection cannot be maintained.

Furthermore, the '507 patent exemplifies NiAl (example 3) and NiB (example 8), and states that "the process was proven viable for metals, alloys, intermetallics, ceramics, composites, and combinations thereof." The '507 patent, col. 13, ll. 59-61. In view of this guidance, is there any reason why one of ordinary skill in the art could not use NiAl and NiB (smaller amount) in the same batch to make a B-doped NiAl? In view of these disclosures, the rejection cannot be maintained and should be withdrawn.

IV. Rejections under 35 U.S.C. § 102

Claims 16-35 and 38-40 were rejected as anticipated under § 102(b) using three different references, namely, Schmidt (U.S. Pat. No. 5,590,387), Lawandy (U.S. Pat. No. 5,882,779), and Hampden-Smith (U.S. Pat. No. 6,180,029). Each rejection is addressed under a separate header after discussing the stated meaning of the term dopant.

According to the rejection, the following assumption was made:

Because the specification does not provide description as to how a dopant can be "combined into the lattice" of the metal compound, for purpose of art rejection, the examiner interprets this process step broadly as a combination of the dopant to a compound by any means including surface-modifying, treating, coating, etc. . .

Office action, para. 7. At its basic level, this rejection, coupled to the § 112, para. 1 rejection, amounts to an improper squeeze. The assertions for this rejection and the enablement rejection cannot both be true and supported by substantial evidence at the same time. Thus, the rejection should be withdrawn.

A. *Schmidt*

The reasoning for the rejection is as follows:

Applicant argues that "'387 does not teach or offer any motivations for combining dopant into the lattice of a metal compound comprising compositions of matter as called for in independent claims 16 and 26." As stated in the last office action, '387 teaches metal containing nanoparticles being surface modified by a surface-modifying agent. Dopant is a small quantity being added to a compound to change the property of the compound. Thus, the surface-modifying agent constitutes dopant because it changes the surface properties of the nanoparticles. Thus, it is necessarily inherent that the dopant (i.e. surface modifying agent) is combined into the lattice of the metal particles (see examiner's note above), especially after the modified particles were subject to sintering.

Office action, para. 8. Regardless of how the Examiner views doping, the surface coatings on the particles of Schmidt cannot be viewed as "substantially compositionally uniform." Thus, this rejection should be withdrawn.

B. *Lawandy*

The reasoning for the rejection is as follows:

Applicant argues that '779 teaches semiconductor cores being coated with certain transition metals and thus does not provide and the coating processes do not teach or offer any motivations for combining elements into the lattice of the metal compound. The coating material constitutes a dopant, and for the dopant to form a coating on the semiconductor core, it is expected that the dopant "combined into the lattice" of the semiconductor core. Note that the specification provides no description as to the combination

step; therefore, this step can be interpreted broadly as combination of the dopant into a material.

Office action, para. 9. Regardless, Lawandy's coated products cannot be viewed as "substantially compositionally uniform." Thus, this rejection should be withdrawn.

C. *Hampden-Smith*

The reasoning is set forth as follows:

Applicant argues the present application has a priority date predates the '029 patent. As discussed in the rejection under 35 USC 112, first paragraph above, the parent applications do not provide support of the claimed invention. Therefore, the present application is not entitled to the benefit of any of its parent applications. The effective filing date for the present application is therefore its actual filing date. Accordingly, the '028 patent is a valid prior art against the claimed invention. Because applicant does not argue to the merit of the rejection, the examiner assumes that applicant agrees with the examiner's position on the '029 patent.

Office action, para. 10. The present version of the claims avoids this issue, because the cited compound $Y_2O_3:Eu^{3+}$ contains O but not one of the others recited in the base claim. For example, claim 16 reads "at least one element selected from the group consisting of: C, O, N, B, S, H, Se, Te, In, Sb, Al, Ni, F, P, Cl, Br, I, Si, and Ge." Thus, the rejection should be withdrawn.

CONCLUSION

It is believed that the present application is in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or

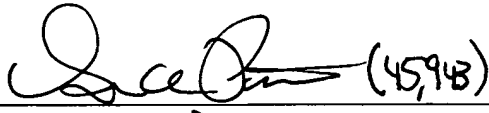
Atty. Dkt. No. A15 DIV(14)
(New Atty. Dkt. No. 037768-0159)
Appl. No. 10/698,577

credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. § 1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date 03-12-2007

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Enclosures: Table 1.

Table 1. Pendency data for the present '577 application family.

Yr	577	Apn A	Apn B	Apn C	Apn D	Apn E	Apn F	Apn G	Apn H	Apn I	Apn J	Apn K
		10/449,278	10/150,722	09/790,036	09/753,806	09/274,517	09/083,893	09/074,534	08/739,257	08/730,661	08/706,819	08/707,341
		6,830,822	6,602,595	6,933,331	6,513,362	6,344,271	6,228,904	6,202,471	5,905,000	5,952,040	5,851,507	5,788,738
96									10-30	10-11	09-03	09-03
97												
98							05-22	05-07			12-22	08-04
99						03-23			05-18	09-14		
00												
01				02-20	01-03		05-08	03-20				
02			05-17			02-05						
03	10-31	05-30	08-05		02-04							
04		12-14										
05				08-23								
06												
*	A,C	B,C	C,D	D,E,F,G	E,F,G	F,G,H,I	G,H,I,J,K	H,I,J,K	I,J,K	J,K	--	--

* Prior copending applications